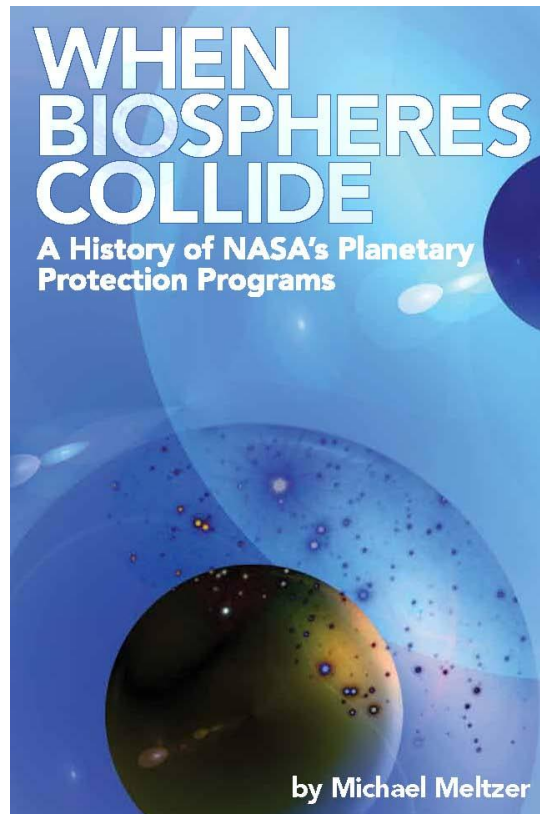




## NEW IN THE NASA HISTORY SERIES



### *When Biospheres Collide: A History of NASA's Planetary Protection Programs*

**By Michael Meltzer**

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(Washington, D.C.: NASA SP-2011-4234), pp. xx +522

Each time a space vehicle visits another world it runs the risk of forever changing that extraterrestrial environment. We are surrounded on Earth by a mélange of different microorganisms, and if some of these hitchhike onboard a space mission, they could contaminate and start colonies on a different planet. Such an occurrence would irrevocably alter the nature of that world, compromise all future scientific exploration of the body, and possibly damage any extant life on it. By inadvertently carrying exotic organisms back to Earth on our spacecraft, we also risk the release of biohazardous materials into our own ecosystem. Such concerns were recognized by scientists even before the 1957 launch of Sputnik.

This book presents the history of planetary protection by tracing the responses to the above concerns on NASA's missions to the Moon, Mars, Venus, Jupiter, Saturn, and many smaller bodies of our solar system. The book relates the extensive efforts put forth by NASA to plan operations and prepare space vehicles that return exemplary science without contaminating the biospheres of other worlds or our own. To protect irreplaceable environments, NASA has committed to conducting space exploration in a manner that is protective of the bodies visited, as well as of our own planet.

**Michael Meltzer** has been writing books and articles about science and technology for over 30 years. He has investigated topics that include NASA expeditions to Jupiter and Saturn, planetary environmental protection, solar house design, industrial pollution prevention, and the history of U.S. commercial fishing. He has also published two science fiction stories with environmental themes. Michael has degrees in physics, geophysics, and environmental science and engineering from the University of California. He was an engineer at Lawrence Livermore National Laboratory for 15 years, where he helped start a pollution prevention program. He lives in Oakland, California.

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